

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application. Material inserted is indicated by underlining and material deleted is indicated by ~~strikeout~~.

Listing of Claims:

Claim 1 (Original) Method for determining whether a substance is a modulator of a target component in a cell, comprising the steps of:

- (a) preparing a cell, which contains the target component, immobilized on an extracellular potential-sensitive electrode,
- (b) bringing a substance to be tested in contact with the cell, in a medium which has a salt concentration of  $\leq 100$  mmol/l,
- (c) measuring a signal at the electrode due to the target component, and
- (d) determining the effect of the substance to be tested on the measurement signal.

Claim 2 (Original) Method according to Claim 1 for determining whether a substance is a modulator of a membrane-associated target component.

Claim 3 (Currently amended) Method according to Claim 1 ~~or 2~~ for determining whether a substance is a modulator of an ion-channel/receptor system.

Claim 4 (Original) Method according to Claim 3, characterized in that the ion-channel/receptor system contains a voltage-controlled, ligand-controlled or mechanically controlled ion channel.

Claim 5 (Original) Method according to Claim 4, characterized in that the ion channel is a potassium channel.

Claim 6 (Original) Method according to Claim 5, characterized in that the potassium channel is selected from hSlo and KV1.3.

Claim 7 (Currently amended) Method according to Claim 3 ~~or 4~~, characterized in that the ion-channel/receptor system contains an NMDA, GABA, AMPA or acetylcholine receptor.

Claim 8 (Currently amended) Method according to Claim 1 ~~one of the preceding claims~~, furthermore comprising stimulation of the target component in the cell.

Claim 9 (Original) Method according to Claim 8, characterized in that the stimulation of the target component comprises electrical, optical or/and chemical stimulation.

Claim 10 (Original) Method according to Claim 9, characterized in that the stimulation of the target component comprises the application of a DC voltage or an AC voltage.

Claim 11 (Currently amended) Method according to Claim 1 ~~one of the preceding claims~~, characterized in that the cell is in contact with an additional electrode, for example a patch clamp.

Claim 12 (Currently amended) Method according to Claim 1 ~~one of the preceding claims~~, characterized in that the potential-sensitive extracellular electrode is arranged on a chip.

Claim 13 (Currently amended) Method according to Claim 1 ~~one of the preceding claims~~, characterized in that an array comprising a multiplicity of cells immobilized on different electrodes is prepared, and a multiplicity of substances are tested.

Claim 14 (Original) Bioelectronic device, comprising:

- a cell which contains a target component,
- a potential-sensitive electrode, the cell being immobilized on the potential-selective electrode and the target component being capable of producing a measurable signal at the electrode, and
- a medium with a salt concentration of  $\leq 100$  mmol/l.

Claim 15 (Original) Use of the bioelectronic device according to Claim 14 for measuring a signal at the potential-sensitive electrode due to the target component.

Claim 16 (Original) Use according to Claim 15 for analyzing individual cells.

Claim 17 (Currently amended) Use according to Claim 15 ~~or 16~~ as a sensor.

Claim 18 (Currently amended) Use according to Claim 15 ~~one of Claims 15 to 17~~, characterized in that the change in an ambient parameter is determined as the detectable signal at the electrode.

Claim 19 (Currently amended) Use according to Claim 15 ~~one of Claims 15 to 18~~ for determining whether a substance is a modulator of the target component.

Claim 20 (Original) Method of locating a cell on an array comprising the steps of:

(a) preparing a cell, immobilized on an extracellular potential-sensitive electrode, which contains the target component,

(b) measuring a signal at the electrode induced by the presence of a cell in a medium which has a salt concentration  $\leq 100$  mmol/l, and

(c) locating the position of the immobilized cell by means of the measurement in (b).

Claim 21 (Original) Method according to claim 20, wherein the cell is immobilized on an array preferably comprising a plurality of extracellular potential-sensitive electrodes.

Claim 22 (Original) Method according to claim 20, wherein step (b) comprises a site-specific measurement.